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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/074,548	02/12/2002	Anthony J. Monteiro	CIS01-29(4757)	6615

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DAVID E. HUANG, ESQ.
BAINWOOD HUANG & ASSOCIATES LLC
2 CONNECTOR ROAD
SUITE 2A
WESTBOROUGH, MA 01581

EXAMINER

REILLY, SEAN M

ART UNIT	PAPER NUMBER
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2153

DATE MAILED: 05/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/074,548	Applicant(s) MONTEIRO, ANTHONY J.	
	Examiner Sean Reilly	Art Unit 2153	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2006.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office action is in response to Applicant's amendment and request for reconsideration filed on February 21, 2006. Claims 1-19 are presented for further examination.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 3, 8, 9, 14-15, and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ebrahim (U.S. Patent Number 6,154,777) and Higuchi et al. (U.S. Patent Number 6,580,717; hereinafter Higuchi).

2. Regarding claims 1, 3, 8, 9, and 14, Ebrahim discloses a content distribution system, comprising:

- a. a domain name service server which is configured to provide domain name service responses in response to domain name service requests (see Figure 4, Component 180 or 200); and
- b. a data communications device which is capable of interconnecting between a client and the domain name service server (Client side process or a physical proxy server, see Figure 4 and Col 7, lines 62-64), wherein the data communications device includes:

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- i. an interface which is capable of communicating with the client (needed for communication with the client process or proxy), and a controller coupled to the interface, wherein the controller is configured to:
 1. intercept a first domain name service request from the client (application process call, Col 3 lines 37-42),
 2. provide a second domain name service request (Client side process or physical proxy server request to the DNS server) to the domain name service server through the interface in response to interception of the first domain name service request, the second domain name service request (i) including a client identifier (caller's IP address or point of origin, Col 4, lines 14-21) which identifies the client, and
 3. convey a domain service response from the domain name service server to the client through the interface, the domain name service response including a content server identifier which identifies a content server (destination host IP address returned to the client, Col 4, lines 61-67).

Ebrahim disclosed the invention substantially as claimed however, Ebrahim failed to specifically recite *selectively* including a client identifier or not including a client identifier *based on a selection decision*. Nevertheless, Ebrahim clearly identifies that the incorporation of client identifiers (caller context) within DNS queries must be standardized so that systems can interoperate properly (Ebrahim Col 4, lines 15-21). In other words the DNS servers that receive DNS query requests containing client identifiers (i.e. a caller_context) must be able to interpret

this *new* DNS protocol in order to respond to the query properly. Further it was widely known in the art at the time of the invention to selectively include or not include information that conforms to a new networking protocol based on whether or not the receiving networking device can understand the new protocol, as evidenced by at least Higuchi.

Higuchi disclosed a networking system that addresses the issue of introducing the new Ipv6 protocol to a network where some of the network devices only support the old IPv4 protocol. Higuchi's system sends packets in an original format (IPv4) and selectively adds information to the packet (i.e. IPv6 header information) based on the capabilities of the destination host (i.e. whether or not the host is IPv6 capable as identified in the address translation table, Col 4, lines 25-30) (see Col 2, line 65 – Col 3, line 11). For instance a packet is sent out in IPv4 format and if the destination host is an IPv6 enabled host then IPv6 header information is added to the packet (Col 5, lines 44-54) conversely, if the destination host is not an IPv6 enabled host then the packet is sent unchanged (Col 6, lines 5-21). By selectively adding IPv6 header information Higuchi ensures systems interoperate properly.

Thus, given the concept of selectively including or not including information that conforms to a new networking protocol based on whether or not the receiving networking device can understand the new protocol as disclosed by Higuchi, it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to modify Ebrahim's system to selectively including client identifiers (analogous to adding IPv6 information in the Higuchi system) based on the capabilities of the destination DNS system, in order to ensure the destination DNS system is able to understand the query and thus ensure that the system is able to interoperate properly. Again, the system would be able to interoperate properly since each

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destination DNS server would always receive DNS queries in a format it understands and therefore can properly respond to.

3. Regarding claims 15, 17, and 18, Ebrahim discloses a domain name service server, comprising:

- an interface (Figure 4, within DNS server 200) which is capable of communicating with a data communications device (Clients Figure 4); and
- a controller coupled to the interface (Figure 4, DNS server 200), wherein the controller is configured to :
 - receive a domain name service request from the data communications device through the interface (Col 4, lines 61-67), the domain name service request including a data communications device identifier which identifies the data communications device (included in the DNS message header – Identifier field),
 - select a content server identifier from a predetermined group of content server identifiers based on (i) a client identifier which identifies a client (e.g. client IP or point of origin, Col 4, lines 15-21) when the domain name service request further includes the client identifier, and (ii) the data communications identifier (requested domain name) when the domain name service request does not include the client identifier (Col 4, lines 22-31), and
 - provide a domain name service response to the data communications device through the interface, the domain name service response having the selected content server

identifier which identifies a content server (destination host IP address returned to the client, Col 4, lines 61-67).

4. **Claims 2, 4-7, 10-13, 16, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ebrahim (U.S. Patent Number 6,154,777) and Higuchi et al. (U.S. Patent Number 6,580,717; hereinafter Higuchi) and Shaikh et al. (IBM Research Report On the Effectiveness of DNS-based Server Selection; hereinafter Shaikh).**
5. Regarding claims 2, 4, and 10, Ebrahim discloses processing circuitry that selectively (i) includes the client identifier in the second domain name service request, and (ii) does not include the client identifier in the of the second domain name service request, based on the selection decision, in order to provide the second domain name service request (as cited in claim 1) however, *Ebrahim does not specifically recite that the client identifier is include in the domain name field of the second request.* Nevertheless Ebrahim does specifically recite that the caller context structure passed “must be well specified and their formats standardized so that many different name resolvers can interoperate properly” (Ebrahim Col 4, lines 15-21). Thus, one of ordinary skill in the art at the time of the invention would have been motivated to seek out analogous art which specifies a format for passing client ID’s within a DNS request, such as the analogous art of Shaikh. In the DNS server system disclosed by Shaikh a requesting client ID (client address) is embedded within the domain name field (DNS question section) of the DNS request (Shaikh pg 10, Section 5 – DNS Protocol Modifications). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the protocol defined by

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Shaikh within the combined Ebrahim and Higuchi system since Shaikh's protocol is well defined and therefore meets the requirements set forth by Ebrahim (Ebrahim Col 4, lines 15-21).

6. Regarding claims 5 and 11, the included client ID is itself a flag that a client ID is present.

7. Regarding claims 6-7 and 12-13, although Ebrahim and Shaikh fail to specifically recite the selection decision is based on a requested domain name being contained on a list of domain names stored in memory, Shaikh does raise the issue of domain name server backward compatibility (i.e. whether a domain name server will be capable of interpreting an embedded client ID) (Shaikh Section 5 – DNS Protocol Modifications). Further, it was widely known in the art at the time of the invention that DNS requests are routed to particular DNS servers based on the requested domain name, by comparing the requested domain name against a list of domain names stored in memory at the client or a proxy (Applicant's attention is drawn to the DNS RFCs of 1987 cited). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined Ebrahim and Shaikh system to selectively embedded DNS requests with a client ID when the DNS server receiving the DNS request will be able to properly interpret the request, thereby ensuring backward compatibility as discussed by Shaikh.

8. Regarding claims 16 and 19, Ebrahim discloses processing circuitry which is configured to determine whether the domain name request includes the client identifier such that (i) selection of the content server identifier is based on the client identifier when the DNS service request includes the client ID, and (ii) selection of the content server identifier is based on the data

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communications identifier when the DNS service request does not include the flag, as addressed in independent claims 15 and 18 above. However, Ebrahim does not specifically recite that the client identifier is include in the domain name field of the second request. Nevertheless Ebrahim does specifically recite that the caller context structure passed “must be well specified and their formats standardized so that many different name resolvers can interoperate properly” (Ebrahim Col 4, lines 15-21). Thus, one of ordinary skill in the art at the time of the invention would have been motivated to seek out analogous art which specifies a format for passing client ID’s within a DNS request, such as the system of Shaikh. In the DNS server system disclosed by Shaikh a requesting client ID (client address) is embedded within the domain name field (DNS question section) of the DNS request (Shaikh pg 10, Section 5 – DNS Protocol Modifications). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the protocol defined by Shaikh within Ebrahim’s system since Shaikh protocol is well defined and therefore meets the requirements set forth by Ebrahim (Ebrahim Col 4, lines 15-21). Regarding the limitation of claims 16 and 19 requiring the use of a flag, the inclusion of a client ID within a request is itself a flag that the client ID is present.

Response to Arguments

9. In response to Applicant’s request for reconsideration filed on February 21, 2006, the following factual arguments are noted:

- a. Neither Ebrahim nor Higuchi disclosed selectively including client identifiers in a DNS request.

In considering (a), Examiner respectfully disagrees with Applicant's argument. Applicant asserts that "Higuchi is not seen to teach or suggest any functionality pertaining to domain name service." Examiner agrees however, the Higuchi reference has not been relied for teaching anything related to DNS systems. Instead Higuchi is relied on to show that the concept of selectively adding or not adding information to support a new protocol based on the capabilities of a receiving network device was widely known in the art at the time of Applicant's invention. As indicated in the above office action Examiner does not assert that either Ebrahim or Higuchi disclosed selectively including client identifiers in a DNS request. Nonetheless Examiner maintains that such a modification would have been obvious in order to ensure that the system is able to interoperate properly as discussed above and referenced by Ebrahim Col 4, lines 15-21.

Conclusion

10. The prior art made of record, in PTO-892 form, and not relied upon is considered pertinent to applicant's disclosure.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean Reilly whose telephone number is 571-272-4228. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glen Burgess can be reached on 571-272-3949. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 28, 2006



KRISNA LIM
PRIMARY EXAMINER